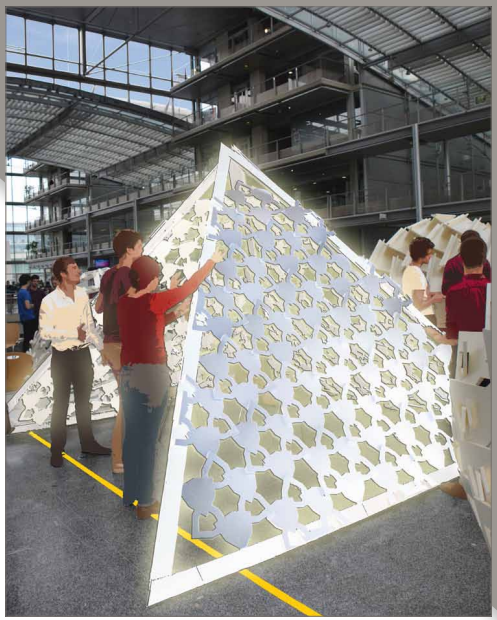
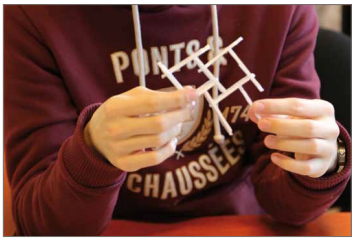
École des Ponts
ParisTech

THE SCHOOL in figures 2014/2015





Since 1747, École nationale des ponts and chaussées (École des Ponts ParisTech) has been training the best engineers, specialists capable of tackling the challenges of their time in the key domains that affect the day-to-day lives of citizens and businesses: transport, housing, energy, environment, urban services and the associated public policies of planning, sustainable regional development and the forecasting and management of environmental risks.

Today, it offers a range of very high level educational programs: engineering and Masters courses, doctorates, specialist Masters degrees, MBA programs, lifelong learning.

In the biggest industrial or service companies, government administrations and regional and local authorities, but also in entrepreneurial ventures, École des Ponts ParisTech graduates are equipped to tackle the most senior managerial roles. They have the capacity to take a long-term perspective and the clarity of vision and ingenuity that come from an education that is both demanding in the scientific, technological or economic spheres, and open to society and the world.

École des Ponts ParisTech aspires to draw on its globally acknowledged excellence in civil engineering, on the very high international quality of its research cluster, on the strength of its partnerships, in particular within Université Paris-Est, and on the international support of ParisTech, in order to extend this position to all the domains associated with the city, the environment and urban and environmental engineering.

Armel de la Bourdonnaye
Director of École nationale des ponts and chaussées

ENGINEERING COURSES

First Year:

Consolidation of scientific knowledge and induction seminars
Immersion course: the year ends with a 4 week company placement (operational role)

Masters program:

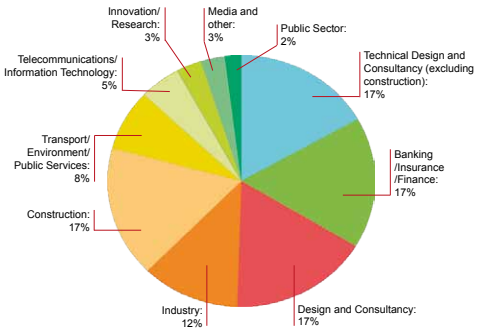
Second Year: choice of a faculty department:
Civil and Structural Engineering
City, Environment, Transport
Mechanical Engineering and Materials Science
Industrial Engineering
Economics, Management, Finance
Applied Mathematics and Computer Science

Second year internship:
Between Years 2 and 3, 80% of the year group take up an optional long one-year internship, more than 20% of them abroad.
The other students follow a short three-month internship in a company or research centre, 14% of them abroad.

Third Year: End of Course Project (PFE):
For at least 4 months, students apply the skills acquired in their program to a scientific or technical problem in a company or research centre.

Job opportunities

2015 survey of graduates in 2014 (excluding civil servants)



Average salary in first job:
€43,300,and €50,300 with bonuses and extras

FACULTY STAFF
1,278 part-time teachers (excluding the 10 permanent language teachers), comprising:
- **178** teachers for the engineering program modules (excluding languages and sport)
- **143** teachers for specialist program modules (Masters, Research Masters), including 36 involved in both programs
- **72** École nationale des ponts and chaussées professors, **3** assistant professors and **72** lecturers

MASTERS PROGRAMS

Subject area - "Sciences and Technology"

- **Multiscale Approaches for Materials and Structures (AMMS)** with UPEM
- **Materials Science for Sustainable Construction (SMCD)** with UPEM
- **Mechanics of Soils, Rocks and Structures in Their Environment (MSROE)** with UPEM, UPMC (Université Paris 6) and CentraleSupélec
- **Durability of Energy Materials and Structures (DMSE)** with UPMC
- **Materials of the Built Fabric in the Environment (MAPE)** with UPEC and Université Paris Diderot (Paris 7)
- **Nuclear Energy, specialty in "dismantlement and waste management"** with ParisTech, Université Paris Sud (Paris 11) and CentraleSupélec, and the support of several industrial firms: EDF, Areva, ENGIS (formerly GDF SUEZ) (Masters ParisTech)
- **Numerical Analysis and Partial Differential Equations (ANEDP)** with UPMC (Université Paris 6), ENS Paris and École Polytechnique
- **Applied Mathematics in Finance (MAF)** with UPEM, UPEC and Université d'Évry-Val-d'Éssonne
- **Mathematics, Vision Learning (MVA)** with Paris Descartes (Paris 5) and Paris Dauphine universities, and ENS Cachan, École Polytechnique, Télécom ParisTech, CentraleSupélec École Centrale Marseille

Subject area - "City, Transport, Environment"

- **Ocean, Atmosphere, Climate and Space Observations (OACOS)** with UPMC (Université Paris 6), ENS Paris, École Polytechnique and ENSTA ParisTech
- **Aquatic Systems and Water Management (SAGE)** with Université Paris Diderot (Paris 7) and UPEC
- **Transport and Mobilities (TM)** with UPEC and UPEM
- **Cities, Services, Uses (VISU)** with UPEM
- **Water, Soil and Waste Management and Treatment** with AgroParisTech, Chimie ParisTech, ENSTA ParisTech, ESPCI ParisTech, MINES ParisTech (ParisTech Masters)

- **Transport and Sustainable Development (TRADD)** with École Polytechnique and MINES ParisTech (ParisTech/Renault Foundation Masters)
- **Mobility and Electric Vehicles (MVE)** with Arts and Métiers ParisTech, MINES ParisTech and ENSTA ParisTech (ParisTech/Renault Foundation Masters)

Subject area - "Economics, Management, Finance"

- **Analysis and Political Economy (APE)** with EHESS, ENSAE ParisTech, ENS Paris, École Polytechnique
- **Sustainable Development, Environmental and Energy Economics (EDDEE)** with Université Paris Ouest Nanterre La Défense, AgroParisTech, EHESS, École Polytechnique, INSTN, MINES ParisTech, IFP School and Université de Bourgogne

SPECIALIST MASTERS PROGRAMS®

13 jointly accredited specialist Masters® programs:

- **Public Policy for Sustainable Development** with AgroParisTech
- **Urban Planning and Development**
- **European Civil Engineering**
- **Civil Engineering for Large Energy Structures** with CentraleSupélec
- **Real Estate, Buildings, Energy** with CSTB
- **Railway and Urban Transport Systems** with ENSIAME Université de Valenciennes and du Hainaut Cambrésis, Université technologique de Compiègne and ENTPE
- **Supply Chain Design & Management** within IML
- **Urban Engineering and Information Technologies** with EIVP
- **Logistical Systems Engineering and Management** with École Hassania des Travaux Publics (Morocco)
- **BIM, Integrated Design and Life-Cycle of Buildings and Infrastructures** with ESTP Paris
- **Integrated Urban Systems** with l'EIVP

- **Decision-Making and Geographical Information Systems** with École Nationale des Sciences Géographiques (ENSG - Géomatique). 1st academic year starting October 2015
- **Computational Design & Making (CD&M)**. 1st academic year starting January 2016

THE DOCTORAL PROGRAM

The research labs at École des Ponts ParisTech are a training ground for many PhD students.
The Doctoral Schools in which École des Ponts ParisTech is a stakeholder, as part of Université Paris-Est, are essentially: "Sciences, Engineering and Environment"; "City, Transport, Territories"; "Mathematics and ICT"; "Organization, Markets, Institutions". Some research labs are also attached to other doctoral schools: the "Économie Panthéon-Sorbonne", "Agriculture, Biology, Environment and Health" (ABIES) and "Social Sciences" doctoral schools at EHESS; or "Sciences de Environnement d'Ile-de-France" and the École Polytechnique doctoral school.

ÉCOLE DES PONTS BUSINESS SCHOOL

The AMBA accredited École des Ponts Business School offers 8 course programs:

- Solvay Ponts Full-Time MBA (Paris and Brussels, Franco-Belgian degree)
- Solvay Ponts Part-Time MBA (Brussels, Franco-Belgian degree)
- Solvay Ponts Global Executive MBA (Paris, triple European and American degree with Solvay and Fox)
- EHTP-Ponts Part-Time MBA (Casablanca, Franco-Moroccan degree)
- Shanghaï International MBA (Shanghai, Franco-Chinese degree)
- Wroclaw-Ponts Part-Time MBA (Wroclaw, Franco-Polish degree)
- Executive MBA in Aviation Management (Beijing, Franco-Chinese degree)
- "International Management" program (cIM - open to engineering and PhD students at the ParisTech Schools)

Qualifications awarded

- **262** engineering degrees
- **138** Masters degrees
- **100** doctorates awarded by Université Paris-Est
- **186** Specialist Masters® degrees
- **102** École des Ponts Business School MBA degrees

Student numbers at the School:

- **834** engineering students:
- **119** in Masters programs, including 47 double degrees
- **237** on Specialist Masters® programs including 42 IEPEF and 15 public service engineers (City of Paris Engineers, military engineers, Public Works Engineers, École normale supérieure, National Geographical Institute)
- **502** PhD researchers preparing theses in one of the School's labs, including 15 IPEF as of January 1, 2015
- **312** on MBA programs
- **9** in post-competition training as State Architects and Planners (AUE)

i.e. a total of: 2,013 students, 25% female

LIFELONG LEARNING

Ponts Formation Conseil

260 training sessions completed in France and abroad

9 certificates (École des Ponts ParisTech qualification)

8 study days completed

185 specific training operations at the request of companies or public authorities, in France and abroad

7,000 participants (engineers and executives)

1,450 speakers (experts and professionals)

62% corporate internships in the competitive sector

38% internships in government bodies

IHEDATE (Institute of Advanced Development and Planning Studies in Europe)

IHEDATE's annual training program is supported by the State (General Committee for Regional Equality, Ministries), groupings of regional authorities (ARF, AdCF), the City of Paris, Nantes Métropole, private and public companies (Immochan, Caisse des dépôts, Colas, ERDF, EDF, Groupe La Poste, SNCF Réseau and SNCF Mobilité, RTE, SMABTP) and by professional bodies (ASFA, FNTP, USIRF).

INTERNATIONAL RELATIONS

54 partner universities
in 32 countries on 4 continents

33 double-degree agreements
with universities in 24 countries

Europe: **19** double-degree agreements
Asia: **5** double-degree agreements
America: **5** double-degree agreements
Africa and the Middle East: **4** double-degree agreements

35 partner institutions in **19** European countries
as part of the ERASMUS + program

4 partner institutions in America under bilateral exchange agreements

834 foreign students:

- **180** on engineering courses as part of a double-degree
- **23** students on 6-month or 1-year exchanges
- **70** in Masters degree programs
- **279** MBA
- **56** on Specialist Masters programs®
- **226** PhD researchers

65 students on engineering programs
(3rd year) abroad

RESEARCH

4 major research domains

École des Ponts ParisTech conducts its research in an interdisciplinary approach to the socio-economic challenges of sustainable development, working on:

- cities and mobilities
- energy efficiency and environment
- the factory of the future
- economics and decision support

11 research labs

The perspective of the School's approach to the value chain is twofold: advancing knowledge and supporting economic development through joint laboratories with universities, France's elite grandes écoles, research organisations and private companies.

- **11 laboratories which in 2014 encompassed more than 1,150 people:**
  - 265 permanent researchers
  - 146 research-teachers
  - 600 PhD researchers and postdocs
- **455 separate articles** cited in Web of Science or Scopus in 2014
- **100 PhD theses defended in** 2014
- **€14.5 million** in revenues with companies and institutions

4 scientific fields

The research labs are organised around the following scientific fields:

Mathematics and Computer Science

- **CERMICS** (Centre for Teaching and Research in Mathematics and Scientific Calculus) École des Ponts ParisTech
- **LIGM** (Gaspard-Monge Computer Science Laboratory): École des Ponts ParisTech and CNRS, ESIEE Paris and UPEM

Mechanics of Materials and Structures

- **NAVIER Laboratory**: École des Ponts ParisTech and CNRS and IFSTTAR
- **LHSV** (Saint-Venant Hydraulics Laboratory): École des Ponts ParisTech and CEREMA and EDF R&D

Sciences and Environmental Engineering

- **CEREA** (Atmospheric Environment Education and Research Centre): École des Ponts ParisTech and EDF R&D
- **CIRED** (International Environment and Development Research Centre): École des Ponts ParisTech and EHESS, AgroParisTech, CIRAD and CNRS
- **LEESU** (Water, Environment and Urban Systems Laboratory): École des Ponts ParisTech and AgroParisTech and UPEC
- **LMD** (Dynamic Meteorology Laboratory): École des Ponts ParisTech and CNRS, École Polytechnique, ENS Paris and UPMC

Economics & Social Sciences

- **LATTS** (Technologies, Territories and Societies Laboratory): École des Ponts ParisTech and CNRS, and UPEM
- **LVMT** (City, Mobility, Transport Laboratory): École des Ponts ParisTech and IFSTTAR and UPEM
- **PjSE** (Paris-Jourdan Economics): École des Ponts ParisTech and CNRS, EHESS, ENS Paris and Inra

Participant in the "Future Investments" programs

The School is involved in 6 LabEx (excellence labs), structured around the following entities:

- **LabEx Urban Futures** (CEREA, CIRED, LATTS, LEESU, LVMT) headed by LVMT
- **LabEx Bézout:** Models and algorithms (CERMICS, LIGM)
- **LabEx OSE:** Opening Economics (PjSE)
- **LabEx SITES:** Sciences, Innovation, Technologies in Society (LATTS)
- **LabEx MMCD:** Multiscale Modelling and Testing of Materials for Sustainable Construction (CERMICS, NAVIER), headed by NAVIER
- **LabEx L-IPSL:** Simon Laplace Institute (LMD)

It is a founder member of ITE, the energy transition Institute, of Ville **Efficacity**, through LVMT, CIRED and CERMICS, within 3 programs on the city, mobility and modelling and optimisation.

The School runs the IDEFI Paris-Est d-School at École des Ponts, which includes the d-thinking Paris partnership with Lapeyre, Thales Optronic and Valeo. Its objective is to design the next generation of products or services for businesses, through a design thinking program conducted by multidisciplinary and international student teams in partnership with Stanford University and its network.

DOCUMENTATION, ARCHIVES AND LEGACY

- **200,000 documents** covering the School's teaching and research fields
- A branch of France's National Library for civil engineering and construction

An educational resource centre open to all, the Lesage Library

- **90,000 documents** of postgraduate, Masters and research level
- **134 seats**, individual working areas, project areas for groups
- Wifi access and self-service IT terminals
- **9,500 e-books**, a press service with 12,000 international press publications
- **17,000 course reports**, student studies and educational materials
- **95,000 hits** on the document portal
- **27,600 visitors a year**, 4,700 registered users, 10,500 documents provided

A Scientific and Technical Information cluster: targeted services for researchers

- **4 research libraries** located within the laboratories
- **40,000 research level documents**, the main science, technology and economics databases (Web of Science, Scopus, Business Source Complete, Mathscinet, Compendex, Techniques de l'Ingénieur...)
- **10,000 e-periodicals, 68,000 scientific journal articles** downloaded annually
- An open HAL archive containing almost 16,000 scientific publications, a quarter of them full text

An exceptional legacy and heritage

- a historical collection of 80,000 manuscripts and printed documents from the 18th to the 20th centuries
- a digital heritage library containing more than **860,000 digitized pages/plates** from the School's historical collections
- **a photo archive** of 13,000 images (bridges, canals, stations, portraits of engineers…)
- **museum collections**, historical records of France's first engineering school
- **an archive department** responsible for collecting, processing and protecting the School's paper and digital archives

Knowledge dissemination tools

- the School's document portal: *bibliotheque.enpc.fr* and its search engine: *search.enpc.fr*
- open archive: *hal-enpc.fr*
- collections catalogued on *theses.fr*, *sudoc.abes.fr* and since 2014 on *worldcat.org*
- digitized legacy libraries: *patrimoine.enpc.fr*, *bibliothequedesphares.fr*, *gallica.bnf.fr*, *archive.org*

THE ALUMNI NETWORK

Ponts Alliance, a recognized public interest organisation founded in 1860, supports the School's **18,500 graduates**: civil engineers, the state corps of civil, hydraulic and forestry engineers, holders of Masters degrees, PhDs or MBAs.

The graduate network, managed by Ponts Alliance, is present in **86 countries** and in all the School's sectors of activity. It is structured around twelve geographical groups, thirteen professional groups – 3 jointly with other schools – and five graduate clubs.

Founded by Théodore de Goldschmidt in 1860, then granted official public interest status in 1885, Ponts Alliance celebrated its 150th anniversary in 2010.

Ponts Alliance has set itself five essential tasks:

- to establish an effective, high-level network both in France and abroad
- to support the careers of School graduates through its service and its career workshops
- to be a forum for discussion and debate on current issues
- to provide special services: a gradual directory, job offers, access to the gradual networks of other ParisTech schools
- to contribute to the development, reputation and influence of École des Ponts ParisTech

ACADEMIC NETWORKS

École des Ponts ParisTech is a member of:

ParisTech
INSTITUT DES SCIENCES ET TECHNOLOGIES PARIS INSTITUTE OF TECHNOLOGY

MEMBRE DE LA COMUE
UNIVERSITÉ PARIS-EST

RÉSEAU DES ÉCOLES SUPÉRIEURES DU DÉVELOPPEMENT DURABLE
CRÉATEUR D'AVENIR

PARIS SCHOOL OF ECONOMICS
ÉCOLE D'ÉCONOMIE DE PARIS

THE SCHOOL IN THE NATIONAL AND INTERNATIONAL RANKINGS

QS World University Rankings 2015:
The School is ranked 290th out of 701 institutions worldwide in the general classification

Étudiant/ Express 2015 ranking:
The School is recognized as one of the best engineering schools, particularly on criteria of academic excellence, international openness and partnership with companies.

PARTNERS

École des Ponts ParisTech has close and varied relations with the economic world: 15 teaching and research chairs operating in partnership with companies, numerous research contracts signed with the eleven laboratories, their senior managers teach at the School, and high level annual courses are available to the School's students.

CONSTRUCTION
BOUYGUES CONSTRUCTION
COLAS
VINCI
EIFFAGE
LEON GROSSE
RABOT DUTILLEUL
SPIE BATIGNOLLES

ENGINEERING
ARTELIA
COLD PAD
EGIS
INGEROP
SCET
SETEC
SYSTRA
TECHNIP

TRANSPORT
ABERTIS
EUROTUNNEL
GRAND PORT MARITIME DU HAVRE
RATP
SNCF RESEAU (ex-RFF)
AEROPORT DE PARIS
SNCF MOBILITE (ex-SNCF)
AIR FRANCE
KEOLIS

ESSENTIAL SERVICES (ELECTRICITY, GAS, WATER, …)
EDF
GDF SUEZ
DALKIA
SUEZ ENVIRONNEMENT

MANUFACTURING INDUSTRY
ALSTOM
ANSALDO/STS
BOMBARDIER
SIEMENS
AIR LIQUIDE
SAINT GOBAIN
SCHNEIDER ELECTRIC
AREVA
RENAULT
LAPEYRE
LVMH
MICHELIN
THALES
LAFARGE
TOTAL

REAL ESTATE
CREDIT AGRICOLE IMMOBILIER
LOGEMENT FRANCAIS
UNIBAIL

PUBLIC ADMINISTRATION
ADEME
VILLE D'AULNAY SOUS BOIS
VILLE DU HAVRE ET COMMUNAUTE D'AGGLOMERATION HAVRAISE
STIF

CONSULTANCY
BOSTON CONSULTING GROUP
MCKINSEY
CAPGEMINI
ACCENTURE

BANKING
AFD
SOCIETE GENERALE
BNP PARIBAS
HSBC FRANCE
MERIDIAM

MEDIA
CANAL PLUS

RETAIL
CARREFOUR
MONOPRIX

PUBLIC ORGANISATIONS
CEA
CETMEF
CEREMA
CSTB
IFSTTAR
IRSN
IRD
MEDDE
MESR
ONEMA
ONDRAF
OSEO
RÉGION ÎLE-DE-FRANCE
RFF
SIAAP
VILLE DE PARIS

École nationale des ponts and chaussées
6 and 8 avenue Blaise-Pascal
Cité Descartes
Champs-sur-Marne
F-77455 Marne-la-Vallée cedex 2
Tél. : +33 (0)1 64 15 30 00
www.enpc.fr

Maison des Ponts
15 rue de la Fontaine-au-Roi
F-75011 Paris
Tél. : + 33 (0) 1 44 58 27 00

You can also find us on Facebook and Twitter

édition avril 2015
© T. Pasquier - C. Rose - P. Renault
Images in Air - École des Ponts ParisTech